AMENDMENT TO THE CLAIMS

1-3. (canceled)

4. (currently amended): ~~The system of claim 3, wherein~~ A system for receiving data regarding usage of a utility product at a plurality of remote locations, wherein

said system comprises a central computer system, a database accessed by said computer system, a plurality of meters, and a communication network connecting each meter within said plurality of meters with said central computer system to transmit data to said central computer system,

said database stores a plurality of data records,

each data record in said plurality of data records includes a meter identifier identifying a meter within said plurality of meters associated with said data record and a public cryptographic key of said meter,

each of said meters includes data storage storing a private cryptographic key of said meter and a microprocessor accessing said data storage and programmed to encrypt a message with said private cryptographic key and to transmit said message encrypted with said private cryptographic key, wherein said message includes an alphanumeric value together with a data value representing a measured usage of said utility product, over said communication network to said central computer system,

information encrypted with said private cryptographic key is decrypted with said public cryptographic key, and

said central computer system includes a processor programmed to receive said message encrypted with said private cryptographic key, to decrypt with said public cryptographic key of said meter, said message encrypted with said private cryptographic key, forming a decrypted message, and to compare a version of said alphanumeric value from said decrypted message with unencrypted version of said alphanumeric value.

each of said meters includes a circuit producing a tamper evident signal in response to detecting tampering with said meter by disconnecting said meter from said

utility product or by opening a cover of said meter,

said microprocessor within each of said meters is additionally programmed to prevent further transmission of utility usage data in response to said tamper evident signal. and

further transmission of utility usage data is prevented by erasing said private cryptographic key stored within said data storage.

5.   ~~The system of claim 1, wherein~~ A system for receiving data regarding usage of a utility product at a plurality of remote locations, wherein

said system comprises a central computer system, a database accessed by said computer system, a plurality of meters, and a communication network connecting each meter within said plurality of meters with said central computer system to transmit data to said central computer system,

said database stores a plurality of data records,

each data record in said plurality of data records includes a meter identifier identifying a meter within said plurality of meters associated with said data record and a public cryptographic key of said meter,

each of said meters includes data storage storing a private cryptographic key of said meter and a microprocessor accessing said data storage and programmed to encrypt a message with said private cryptographic key and to transmit said message encrypted with said private cryptographic key, wherein said message includes an alphanumeric value together with a data value representing a measured usage of said utility product, over said communication network to said central computer system,

information encrypted with said private cryptographic key is decrypted with said public cryptographic key, and

said central computer system includes a processor programmed to receive said message encrypted with said private cryptographic key, to decrypt with said public cryptographic key of said meter, said message encrypted with said private cryptographic key, forming a decrypted message, and to compare a version of said alphanumeric value from said decrypted message with unencrypted version of said

alphanumeric value, wherein.

said communication network additionally connects each meter within said plurality of meters with said central computer system to receive data from said central computer system,

said processor in said central computer system is additionally programmed to generate and store a random value to be used as said alphanumeric value, to call each meter in said plurality of meters on a periodic basis over said communication network and to transmit said random value to said meter, and to store said data derived from said data value representing a measured usage of said utility product within said data record including said meter identifier identifying said meter in response to determining that said decrypted message matches said unencrypted version of said message.

6. (original): The system of claim 5, wherein said microprocessor in each meter in said plurality of meters is additionally programmed to determine whether a call received over said communication network has come from said central computer system.

7. (original): The system of claim 6, wherein

said communications network includes a switched telephone network, and

a determination of whether said call received over said communication network is made using a process for identifying a caller over a telephone network.

8. (currently amended): ~~The system of claim 1, wherein~~ A system for receiving data regarding usage of a utility product at a plurality of remote locations, wherein

said system comprises a central computer system, a database accessed by said computer system, a plurality of meters, and a communication network connecting each meter within said plurality of meters with said central computer system to transmit data to said central computer system,

said database stores a plurality of data records,

each data record in said plurality of data records includes a meter identifier identifying a meter within said plurality of meters associated with said data record and a

public cryptographic key of said meter,

each of said meters includes data storage storing a private cryptographic key of said meter and a microprocessor accessing said data storage and programmed to encrypt a message with said private cryptographic key and to transmit said message encrypted with said private cryptographic key, wherein said message includes an alphanumeric value together with a data value representing a measured usage of said utility product, over said communication network to said central computer system,

information encrypted with said private cryptographic key is decrypted with said public cryptographic key,

said central computer system includes a processor programmed to receive said message encrypted with said private cryptographic key, to decrypt with said public cryptographic key of said meter, said message encrypted with said private cryptographic key, forming a decrypted message, and to compare a version of said alphanumeric value from said decrypted message with unencrypted version of said alphanumeric value. and

said microprocessor in each meter in said plurality of meters is additionally programmed to generate an ordered sequence of values for use as each said alphanumeric value, and to transmit, on a periodic basis, to said central computer system, a next value from said ordered sequence of alphanumeric values, in an unencrypted form and as combined with said value representing said measured usage of said utility product and encrypted with said private cryptographic key, and said processor within said central computer system is additionally programmed to receive said unencrypted form of said value in said ordered sequence of values as unencrypted version of said alphanumeric value, to determine whether said alphanumeric value received as said message follows, within said ordered sequence of alphanumeric values, a version of said alphanumeric value previously transmitted from said meter, and to store data derived from said value representing a measured usage of said utility product within said data record including said meter identifier identifying said meter in response to determining that said decrypted message matches said unencrypted version of said message together with determining that said alphanumeric value follows

said version of said alphanumeric value previously transmitted from said meter.

9. (original): The system of claim 8, wherein said central computer system is additionally program ed to read said version of said alphanumeric value previously transmitted from said meter from said data record including said meter identifier identifying said meter and to write said alphanumeric value received as said message to said data record including said meter identifier.

10. (currently amended): The system of claim ~~4~~ 5, wherein said central computer system is additionally programmed to receive a transmission over said communication network from an additional meter, to recognize a set up request code transmitted from said additional meter, to receive a meter identifier and a public cryptographic key from said additional meter, and to record said meter identifier and said public cryptographic key received from said additional meter in an additional data record within said database.

11. (currently amended): The system of claim ~~4~~ 5, additionally comprising a server computer having an interface for communicating over a computer network with at least one client computer and accessing said database, wherein

said server computer receives data from said client computer including a meter identifier stored in a data record within said database, and

said server computer writes data received from said client computer to said data record within said database.

12. (canceled)

13. (currently amended): ~~The central computer system of claim 12,~~ A central computer system for receiving data regarding usage of a utility product at a plurality of remote locations, wherein said computer system comprises:

a database storing a plurality of data records, wherein each data record in said plurality of data records includes a meter identifier identifying a meter within a plurality of meters associated with said data record and a public cryptographic key of said meter; and

a processor programmed to receive a meter identifier and message encrypted with a private cryptographic key, wherein said message includes an alphanumeric value and a data value representing a measured usage of said utility product, transmitted over a communication network, to find a public cryptographic key within said data base in a data record storing said meter identifier, to decrypt, with said public cryptographic key of said meter, said message encrypted with said private cryptographic key, forming a decrypted message, and to compare a version of said alphanumeric value within said decrypted message with an unencrypted version of said altphanumeric value.

wherein said processor in said central computer system is additionally programmed to:

generate and store a random value to be used as said alphanumeric value,

call each meter in said plurality of meters on a periodic basis over said communication network and to transmit said random alphanumeric value to said meter, and

store data derived from said data value representing a measured usage of said utility product within said data record including said meter identifier identifying said meter in response to determining that said version of said alphanumeric value within said decrypted message matches said unencrypted version of said alphanumeric value.

14. ~~The central computer system of claim 12,~~ A central computer system for receiving data regarding usage of a utility product at a plurality of remote locations, wherein said computer system comprises:

a database storing a plurality of data records, wherein each data record in said plurality of data records includes a meter identifier identifying a meter within a plurality of meters associated with said data record and a public cryptographic key of said meter; and

a processor programmed to receive a meter identifier and message encrypted
with a private cryptographic key, wherein said message includes an alphanumeric value
and a data value representing a measured usage of said utility product, transmitted over
a communication network, to find a public cryptographic key within said data base in a
data record storing said meter identifier, to decrypt, with said public cryptographic key of
said meter, said message encrypted with said private cryptographic key, forming a
decrypted message, and to compare a version of said alphanumeric value within said
decrypted message with an unencrypted version of said altphanumeric value.

wherein said processor within said central computer system is additionally
programmed to:

receive an unencrypted form of a alphanumeric value,

determine whether said alphanumeric value received follows, within an ordered
sequence of alphanumeric values, a version of a alphanumeric value previously
transmitted from a meter identified by said meter identifier as said message, and

store data derived from said value representing a measured usage of said utility
product within said data record including said meter identifier identifying said meter in
response to determining that said alphanumeric value from said decrypted message
matches said unencrypted version of said alphanumeric value together with determining
that said alphanumeric value follows said version of said alphanumeric value previously
transmitted from said meter.

15. (original): The central computer system of claim 14, wherein said central computer
system is additionally programmed to read said version of said alphanumeric value
previously transmitted from said meter from said data record including said meter
identifier and to write said alphanumeric value received to said data record including
said meter identifier.

16-36. (canceled)

37. (currently amended): ~~The method of claim 35, wherein~~

~~——step a) is preceded by following steps f) through k):~~ A method for receiving data regarding usage of a utility product from a meter in a remote location within a central computer and for storing said data, wherein said method comprises:

~~f)~~ a) generating a random value in said central computer and storing said random value as said unencrypted version of said alphanumeric value;

~~g)~~ b) initiating a call over said communication network from said central computer to said meter; and

~~h)~~ c) transmitting said random value as said alphanumeric value over said communication network from said central computer to said meter, ~~and~~

~~——step c) is followed by~~:

~~a)~~ d) receiving an encrypted message transmitted over a communication network from a meter, wherein said message includes an alphanumeric value and utility usage data;

~~b)~~ e) decrypting said message using a public cryptographic key of said meter stored within a database accessed by said central computer, wherein said public cryptographic key decrypts information encrypted with said private cryptographic key; and

~~c)~~ f) comparing said alphanumeric value in said message decrypted in step e) with an unencrypted version of said alphanumeric value

~~i)~~ g) storing said utility usage data transmitted from said meter in step ~~a)~~ d) in response to a determination in step ~~e)~~ f) that said alphanumeric value from said message decrypted in step ~~b)~~ e) matches said unencrypted version of said alphanumeric value.

38. (currently amended): The method of claim 37, wherein

step ~~i)~~ g) is preceded by following steps j) through k):

j) transmitting said public cryptographic key of said meter, along with an identifier of said meter, from said meter to said central computer over said communication network; and

k) writing said identifier of said meter and said public cryptographic key of said meter within a data record in said database accessed by said central computer, and

in step i) said utility usage data is stored in said data record in said database accessed by said central computer.

39. (currently amended): ~~The method of claim 35, wherein~~. A method for receiving data regarding usage of a utility product from a meter in a remote location within a central computer and for storing said data, wherein said method comprises:

a) receiving an encrypted message transmitted over a communication network from a meter, wherein said message includes an alphanumeric value and utility usage data;

b) decrypting said message using a public cryptographic key of said meter stored within a database accessed by said central computer, wherein said public cryptographic key decrypts information encrypted with said private cryptographic key; and

c) comparing said alphanumeric value in said message decrypted in step b) with an unencrypted version of said alphanumeric value, wherein

said encrypted message is received in step a) as a portion of a transmission initiated by said meter, together with said unencrypted form of said alphanumeric value, and

step c) is followed by following steps l) through m):

l) determining in said central computer system whether said alphanumeric value additionally transmitted in an unencrypted form in step d) follows an alphanumeric value additionally transmitted by said meter in said predetermined sequence of alphanumeric values, and

m) storing said utility usage data transmitted from said meter in step d) in response to a determination in step f) that said alphanumeric value from said message decrypted in step b) matches said unencrypted version of said alphanumeric value together with a determination in step o) that said

alphanumeric value additionally transmitted in an unencrypted form in step d) follows an alphanumeric value additionally transmitted by said meter in said predetermined sequence of alphanumeric values.

40. (original): The method of claim 39, wherein

step a) is preceded by following steps n) through o):

n) receiving said public cryptographic key of said meter, along with an identifier of said meter, transmitted from said meter over said communication network; and

o) writing said identifier of said meter and said public cryptographic key of said meter within a data record in said database accessed by said central computer, and

in step m) said utility usage data is stored, along with said alphanumeric value additionally transmitted by said meter in said data record in said database.

41-48. (canceled)

49. (currently amended): ~~The computer readable medium of claim 47, wherein step a) is preceded by following steps f) through k):~~ A computer readable medium having computer readable program code embodied therein causing a processor within a computer to perform a method for receiving data regarding usage of a utility product from a meter in a remote location within a central computer and for storing said data, wherein said method comprises:

~~f)~~ a) generating a random value in said central computer and storing said random value as said unencrypted version of said alphanumeric value;

~~g)~~ b) initiating a call over said communication network from said central computer to said meter; and

~~h)~~ c) transmitting said random value as said alphanumeric value over said communication network from said central computer to said meter, ~~and~~

~~step c) is followed by:~~

a) d) receiving an encrypted message transmitted over a communication network from a meter, wherein said message includes an alphanumeric value and utility usage data;

b) e) decrypting said message using a public cryptographic key of said meter stored within a database accessed by said central computer, wherein said public cryptographic key decrypts information encrypted with said private cryptographic key; and

c) f) comparing said alphanumeric value in said message decrypted in step e) with an unencrypted version of said alphanumeric value

i) g) storing said utility usage data transmitted from said meter in step a) d) in response to a determination in step c) f) that said alphanumeric value from said message decrypted in step b) e) matches said unencrypted version of said alphanumeric value.

50. (currently amended): The computer readable medium of claim 49, wherein

step i) g) is preceded by following steps j) through k):

j) transmitting said public cryptographic key of said meter, along with an identifier of said meter, from said meter to said central computer over said communication network; and

k) writing said identifier of said meter and said public cryptographic key of said meter within a data record in said database accessed by said central computer, and

in step i) said utility usage data is stored in said data record in said database accessed by said central computer.

51. (currently amended): The computer readable medium of claim 47, wherein A computer readable medium having computer readable program code embodied therein causing a processor within a computer to perform a method for receiving data regarding usage of a utility product from a meter in a remote location within a central computer and for storing said data, wherein said method comprises:

a) receiving an encrypted message transmitted over a communication network from a meter, wherein said message includes an alphanumeric value and utility usage data;

b) decrypting said message using a public cryptographic key of said meter stored within a database accessed by said central computer, wherein said public cryptographic key decrypts information encrypted with said private cryptographic key; and

c) comparing said alphanumeric value in said message decrypted in step b) with an unencrypted version of said alphanumeric value, wherein

said encrypted message is received in step a) as a portion of a transmission initiated by said meter, together with said unencrypted form of said alphanumeric value, and

step c) is followed by following steps l) through m):

l) determining in said central computer system whether said alphanumeric value additionally transmitted in an unencrypted form in step d) follows an alphanumeric value additionally transmitted by said meter in said predetermined sequence of alphanumeric values, and

m) storing said utility usage data transmitted from said meter in step d) in response to a determination in step f) that said alphanumeric value from said message decrypted in step b) matches said unencrypted version of said alphanumeric value together with a determination in step o) that said alphanumeric value additionally transmitted in an unencrypted form in step d) follows an alphanumeric value additionally transmitted by said meter in said predetermined sequence of alphanumeric values.

52. (original): The computer readable medium of claim 51, wherein

step a) is preceded by following steps n) through o):

n) receiving said public cryptographic key of said meter, along with an identifier of said meter, transmitted from said meter over said communication network; and

o) writing said identifier of said meter and said public cryptographic key of said meter within a data record in said database accessed by said central computer, and

in step m) said utility usage data is stored, along with said alphanumeric value additionally transmitted by said meter in said data record in said database.

53-64. (canceled)